



COMPARING CROP WATER CONSUMPTIVE USE IN THE SACRAMENTO SAN JOAQUIN DELTA: PROOF OF CONCEPT

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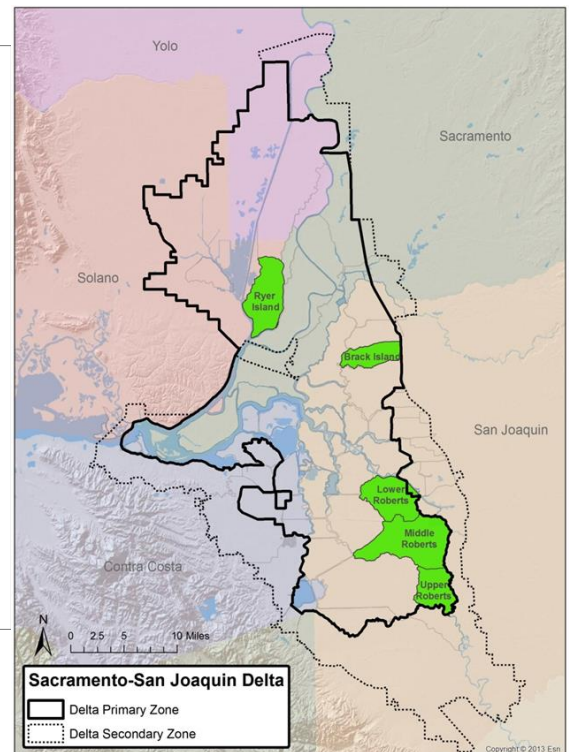
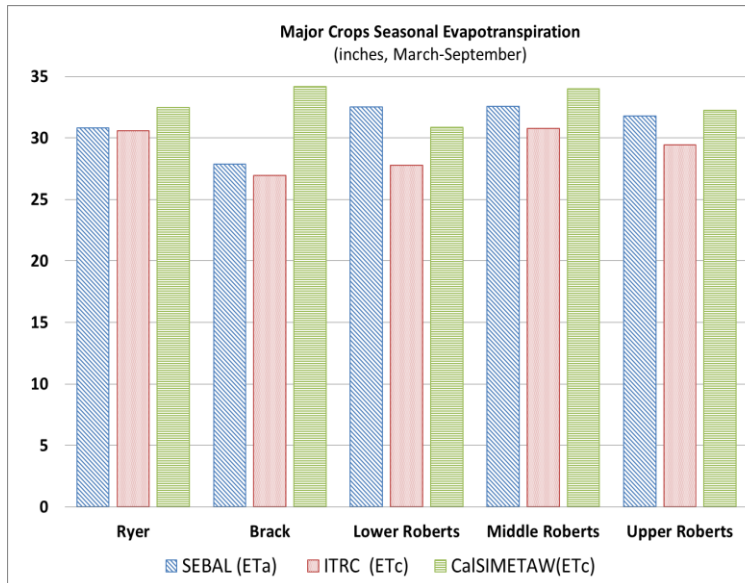
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Crop consumptive water use in the Delta is the amount of water that crops evapotranspire to the atmosphere and is not returned to Delta channels. Crop evapotranspiration includes soil evaporation plus water transpired by the crop. The total water applied to crops includes the consumptive water use plus additional water needed for leaching and irrigation uniformity that returns to the Delta. This study compared three estimates of consumptive water use. Two methods using crop coefficients and a third method using remote sensing (DWR's CalSIMETAW, CalPoly ITRC and SEBAL). We examined eight crop groups: alfalfa, corn, field crops, tomatoes, grain, vine, orchards, and pasture for five Delta islands (Ryer, Back Tract, Lower, Middle and Upper Roberts).



Results

- Consumptive use comparison across the three methods shows that remote sensing measurements using SEBAL:
 - provide accurate estimates of ET,
 - capture crop stress and within- field crop distributions and,
 - are a non-intrusive and consistent way to acquire data needed for crop ET estimation
- Useful extensions would include:
 - Comparisons with DWR's DETAW model
 - Expanding analysis to all Delta crop areas.
- An inter-agency data program for consumptive water use is encouraged.